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ABSTRACT

The quantity of information obtained by performance assessments, compared to traditional testing methods, not only offers the potential for a great deal more feedback to educators, students, parents, and policy makers, but also presents educational personnel with the additional challenge of developing new techniques for effectively disseminating this information. One of the strengths of the Urban District Assessment Consortium (UDAC) project is a commitment to a close interactive relationship among researchers, schools, and the public. This commitment includes the development and implementation of strategies for the rapid and effective dissemination of research findings to students, teachers, school administrators, parents, and other interested community members. Moreover, UDAC reporting techniques strive for a two-way interaction between educators and UDAC personnel while utilizing a user-friendly, succinct, meaningful, yet simple, format. This paper describes successful reporting strategies developed or adapted by UDAC to communicate results of assessment administrations effectively. A typical UDAC report is described and discussed. The paper concludes with a set of recommendations for reporting practices for alternative/performance assessment programs. Includes two figures and three tables. (Contains 6 reference.) (Author/SLD)

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Meaningful Reporting Practices to Benefit Instruction: Disseminating the Rich Results of Performance and Open-Ended Assessments[1,2]

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ED 380 484

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Abstract

The quantity of information obtained by performance assessments, compared to traditional testing methods, not only offers the potential for a great deal more feedback to educators, students, parents and policy makers, but also presents educational personnel the additional challenge of developing new techniques for effectively disseminating this information. One of the strengths of the UDAC project is a commitment to a close interactive relationship between researchers, schools and the public. This commitment includes the development and implementation of strategies for the rapid and effective dissemination of research findings to students, teachers, school administrators, parents and other interested community members. Moreover, UDAC reporting techniques strive for a two-way interaction between educators and UDAC personnel while utilizing a user friendly, succinct, meaningful yet simple format.

This paper describes the successful reporting strategies developed or adapted by UDAC to effectively communicate the results of assessment administrations. A typical UDAC report is described and discussed. The paper concludes with a set of recommendations for reporting practices for alternative/performance assessment programs.

Meaningful Reporting Practices to Benefit Instruction: Disseminating the Rich Results of Performance and Open-Ended Assessments

Introduction

Perhaps the area most neglected in efforts to develop performance assessments is that of interpreting and reporting results in ways which capture the depth and richness of information tapped by these innovative instruments. The quantity of information obtained by performance assessments, compared to traditional testing methods, not only offers the potential for a great deal more feedback to educators, students, parents and policy makers, but also presents educational personnel the additional challenge of developing new techniques for effectively disseminating this information. Unfortunately, all too often invaluable pedagogical findings have failed to be utilized by those who would receive the most benefit (Lytle, 1993). In the past, this has frequently occurred because those individuals who are able to implement these findings have remained unaware as a consequence of ineffective and/or inefficient reporting practices (Viadero, 1993) or misinterpretation of results (Jaeger, 1991).

One of the strengths of the Urban District Assessment Consortium[1] (UDAC) project is a commitment to a close interactive relationship between researchers, schools and the public. This commitment includes the development and implementation of strategies for the rapid and effective dissemination of research findings to students, teachers, school administrators, parents and other interested community members. Moreover, UDAC reporting techniques to schools strive for two-way interaction between educators and UDAC personnel while utilizing a user friendly, succinct yet meaningful format. This is

[1] The Urban District Assessment Consortium is a multi-year collaborative effort between the Center for the Study of Testing, Evaluation and Educational Policy at Boston College and 11 urban school districts throughout the United States. UDAC is funded by the John D. and Catherine T. MacArthur, Ford and Boston Foundations and Pew Charitable Trusts.

The goal of UDAC is to develop two assessment systems. The first aims to improve teaching and learning at the classroom level. The second, equally important system, speaks to accountability and seeks to measure the overall performance of schools.

particularly valuable for presenting results to the urban populations that are the specific targets of UDAC performance assessments. It has long been recognized these populations require special needs, however it is yet to become accepted practice for efficient reporting of pedagogical findings to be one of these needs.

The purpose of this presentation is to review the methods by which UDAC has successfully approached the challenge of (1) presenting the rich information made available through the administration of performance assessments, and (2) disseminating this information to the diverse groups responsible for guiding education. This, so schools are made aware both of those educational practices that have proven to be successful and those that have not. Thus, educators are able to adopt worthwhile solutions while avoiding unsuccessful procedures. The paper concludes with a set of recommendations for reporting the results of performance assessments.

Development of UDAC Reports

Alternative assessments offer the opportunity to use direct methods of assessment, which mirror real-world situations, to assess not only what a student knows, but also what a student can do. Such assessments offer a bountiful source of information. However, benefit can only be reaped if this information is reported in a comprehensive yet meaningful way. Indeed, within any assessment program all the investment of time, effort and resources will be in vain if assessment results are not communicated successfully and accurately so that they can be used.

We are all familiar with the several hundred page reports published to disseminate the results of many testing programs. The length of these reports is often so formidable few of us have time to even attempt to read them. Those fortunate few who have the time to read these daunting documents are often greeted with a flood of statistical tables accompanied by descriptive text so technical the report becomes meaningless to most readers. On the other extreme are those testing programs which merely report a handful of

statistics. Typically these include percentiles and means. Although these results are important, there is a limit to how useful these descriptive statistics can be in isolation from other information. A better reporting strategy is likely to be found part way between these two extremes and this is the strategy adopted by UDAC. Specifically, the reporting strategy adopted by UDAC was to pose three questions:

(1) Who is/are the target audience(s)?
(2) What results are to be communicated?
(3) What strategy is best to communicate these results?

Target Audiences. Assessment results are likely to be of interest to many individuals (including teachers, students, parents, administrators and curriculum developers) and interested groups (including school boards, school site councils, district offices and parent-teacher associations). Furthermore, the wealth of information from alternative assessments may be extremely difficult to effectively disseminate in a single report. Each audience will likely be most interested in different aspects of the assessment results. For example, teachers will likely be most interested in those assessment results that indicate what skills and knowledge students have mastered and what skills and knowledge they have not. Obviously, this is the information teachers would find most useful to guide choice of pedagogical strategies and curriculum development. As another example, a school board may be most interested in how the performance of students from their school compares to the performance of other students (from neighboring schools, districts or even nationwide).

Creating a single comprehensive report to meet the needs of all audiences would be, at the very least, challenging. One solution is to produce multiple reports each tailored to a specific target audience. Advantages of this strategy include (1) the opportunity to structure the report for any audience to communicate the specific information you wish to share, and (2) each audience does not need to sift through an enormous quantity of irrelevant or potentially confusing information to find the particular information of value to them.

Another important consideration is the language of the audience. Within the schools served by UDAC the primary language of many individuals was Spanish -- as may be the case in many urban areas. Thus, UDAC was prepared to produce separate reports in both English and Spanish to suit the linguistic requirements of the target audience. UDAC worked closely with parents and other community members. This interaction and community involvement was extremely valuable. At all times it was important to address the linguistic issue to avoid language becoming a possible barrier.

Choice Of Results. The wealth of information provided by alternative assessments offers the opportunity to report a broad range of in-depth findings. An effective interactive strategy adopted by UDAC was for UDAC staff to brief senior school faculty (usually the school principal and one or more aids) on the results of the initial assessment analyses. These faculty were then asked what portion of the wide range of results they wished to emphasize in the initial report of results to the broader school community. In this way UDAC assessment results were tailored to suit the individual needs of each school with input from senior school faculty. This interactive approach was extremely valuable even though it required a greater investment of time and resources by the assessment organization. For example, if student writing skills were found to be particularly weak while other academic skills were acceptable, senior faculty might request a tailored report to school faculty designed to highlight this problem and suggest a whole school innovation to improve writing. Other tailored reports could highlight to a district office the need for increased funding for library books, text books, computers or other educational resources. Indeed, information reaped from alternative assessments is likely to prove a boon to schools -- but only if this information is communicated effectively to specific target audiences.

How To Communicate. Reports should be developed while constantly considering the target audience. Most school based audiences are unfamiliar with technical educational measurement or psychometric terminology. Hence, this terminology should be avoided. If a report is to be used effectively, it must be understood. This can best be achieved by keeping the language simple and non-technical.

Statistical summaries are often an effective method of communicating results. However, with school audiences only simple statistics should be used and these should be used sparingly. (This is not to say statistical summaries should not be used in a technical report or a report tailored to an audience of measurement specialists. However, they are best kept to a minimum in reports targeted towards a typical school based audience.) Nolen, Haladyna and Haas (1989) surveyed 2,500 teachers and found almost half reported themselves as unprepared to discuss results of typical standardized testing programs with parents. Concern over the ability of our target population to understand those statistics used to report results of typical standardized testing programs prompted us to survey the statistical knowledge of the senior faculty within our target schools. A survey was distributed to principals and support staff of the participating schools. Follow up phone calls were made to four schools and a final response rate of 89 percent was achieved. The survey was designed to determine (1) how useful do senior school faculty consider various statistics that may be found in reports from testing agencies, and (2) to what extent do senior school faculty understand those statistics that may be found in reports from testing agencies? The results of these two questions are reported in Tables 1 and 2.

Insert Tables 1 and 2 About Here

Table 1 shows all of the survey respondents reported understanding only two statistics; the mean and percentile. Half or fewer reported understanding the mode, variance, item discrimination and the various indices of standard error. More than one third

did not understand validity or reliability, and more than ten percent did not understand the median, range, standard deviation or percent correct. When the results of Table 1 are considered, the results reported in Table 2 are perhaps not surprising. Clearly, a substantial proportion of respondents did not perceive any of these statistics to be useful. Indeed, few respondents thought any statistics "very useful," although it is worthwhile to highlight item difficulty (percent correct), validity and reliability were looked upon more favorably than most.

Statistical summaries incorporated into UDAC reports were made while considering the statistical knowledge of the target population exemplified by Tables 1 and 2. Hence, statistics were used sparingly and only the mean and percent correct were used. These statistics were supported with explanatory text and visual summaries in the form of graphs.

Dissemination of UDAC Reports

To obtain feedback with regard to the effectiveness of the reports developed by UDAC, a survey was distributed to principals of the participating schools. The prevalent assessment program in the Boston Public Schools at the time of the UDAC administration was the MET. Thus, a comparison was drawn between reports generated by the UDAC and MET assessments. Specifically, we wanted to ensure UDAC reports reached the same audiences as the MET reports. The results of this survey are reported in Table 3.

Insert Table 3 About Here

Table 3 clearly indicates UDAC reports were shared with the same audiences as MET reports. Reports were shared with identical proportions of teachers, parents, administrators at the school, other principals, school boards and school site councils. Principals reported sharing the MET report with proportionally more students and district administrators than UDAC reports, however this may have been due to the novelty of the

UDAC assessment program and the associated uncertainty inherent within any new program.

Structure of a Typical UDAC School Report

This final section describes the structure of a typical UDAC school report. The UDAC target audience was the school community with whom we had been working closely. This was a non-technical audience composed of teachers, administrators, students and parents. In a brief introduction, designed to familiarize our audience with the UDAC assessment program and reports, we described the UDAC project, it's purpose, the relationship between UDAC and the school and gave a description of the assessments. We also included directions describing how to use the report.

In deciding what results were to be communicated, we reported sufficient information for teachers, administrators and parents to draw comprehensive conclusions about student performance. Moreover, clear descriptions were given of those skills, abilities and knowledge students had mastered and those where more work was needed. An overall summary of student performance including a brief statement of those skills, abilities and knowledge students performed well, performed adequately and performed poorly was included. An example of the information reported is given below:

What Students do Well
Students work cooperatively in groups, attempt to answer questions even if they are not certain of the correct answer.

What Students do Adequately
Orally describe strategies to solve problems.

What Students do Poorly
Generally students fail to plan before they act; take insufficient care when reading instructions.

Note that these summaries of student performance describe those skills and abilities that students do rather than attempting to describe what they know. This overall summary

was followed by similar statements covering those skills, abilities and knowledge students performed well, performed adequately and performed poorly in the specific subject areas covered by UDAC assessments (i.e., reading, writing, math and science). A contact name, address and phone number is provided for readers who desire to learn more about UDAC or more about the performance of their school.

For those members of the target audience who required more detailed information a series of short appendices were provided. Each appendix presented simple statistical and graphical summaries of student performance on a particular subject and gave examples of typical test items. In an attempt to make student performance more meaningful, items were placed into the framework used by the National Assessment of Educational Progress (NAEP). Items were loosely sorted into the levels of difficulty and/or content used by NAEP. It is emphasized this placement was just an approximation designed to provide UDAC audiences with a framework within which to interpret UDAC assessment results. As NAEP is one of the largest and longest running assessment programs in the United States, linking UDAC items with NAEP items helped audiences (at least those audiences familiar with NAEP) to view student performance on the UDAC assessment within a familiar framework. An extract from a typical appendix to a UDAC report is presented in Figure 1. This appendix discusses performance in math, similar appendices discuss performance in science, reading and writing.

Insert Figure 1 About Here

Note both absolute and comparative performance is provided for each school. Absolute information is provided by reporting the proportion of students within each school whose performance is excellent, satisfactory or unsatisfactory for each NAEP level. Comparative information is provided through a comparison of the proportion of students

whose performance was excellent, satisfactory or unsatisfactory within each school, with the proportion of students who performed at each of these levels within the entire sample of students who took these items throughout the Boston Public Schools system.

Two-Way Interaction

One of the most effective aspects of UDAC reports was the inclusion of a section requiring two-way interaction. The example in Figure 2 is taken from a typical UDAC report. Usually this section was the final page of the report and required two-way

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Insert Figure 2 About Here

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interaction between the report authors and the school community. By the time the community had reached this final page they were familiar with the contents of the report, were aware of the context, and probably had discussed the results at meetings. They were now asked to discuss the implications of the results in relation to school policy and procedures. This two-way interaction presented an opportunity for the school community to discuss the results, set realistic goals and to develop strategies to achieve these goals. Space on this final page of the report requiring readers to write decisions, strategies and solutions ensured ownership of these decisions was returned to the school community -- those individuals who must ultimately be responsible for making the necessary pedagogical decisions affecting educational instruction.

UDAC views this two-way interaction as essential to address what Viadero (1993) describes as the most important question asked by educators when they are presented with assessment results: "So what do I do with this now?" (Viadero, 1993, p.13). Two-way interactions between UDAC and the schools that are assessed occurred during three phases: (1) report of the initial results to senior school faculty who then guided the content of future reports, (2) final page of each report requiring the school community to discuss results, set

goals and develop strategies to reach these goals, and (3) the offer for UDAC to perform any secondary analyses required by the school to answer any specific questions posed by the school as a consequence of the assessment results.

Recommendations and Conclusions

Several recommendations for reporting assessment results can be made on the basis of this study:

- Encourage two-way interaction between the reporting agency and the recipient audience. This avoids a dictatorial approach whereby teachers are told by testing experts what they should do to improve student performance. Also, this approach insures ownership of the resultant decisions by those members of the school community who are going to be responsible for implementing any pedagogical changes. Both members of the school community and testing experts can meaningfully contribute to the interpretation of the results of testing programs. For example, testing experts are in the best position to interpret and explain assessment results, and teachers are in the best position to discuss the implications of these results and to decide on appropriate pedagogical action.
- Be prepared to run secondary analyses on assessment data if the school identifies issues or questions that require further analyses.
- Statistical summaries, although invaluable for many audiences, should be used sparingly with populations similar to those described in this study. Furthermore, what statistical summaries are used should employ simple statistics. It should be remembered that if the contents of a report are to be used effectively, then these contents need to be understood. Results of this study demonstrate all senior school faculty, at least within the sample surveyed in this study, understood only two of the statistics that may be used by testing organizations to report results; the mean and percentile. Fewer than half understood standard errors of estimation or measurement

and item discrimination. More than one third did not understand mode or even validity and reliability. Therefore reports to school personnel should avoid these statistics or add explanatory text to describe the meaning and implication of each statistic. (It is emphasized these findings should not reflect poorly on school faculty, many of whom have not received any measurement or statistical training since college, but should rather act as an indicator to assessment organizations as to what statistics should be reported.)

- Keep the language within the report text simple and non-technical.
- Be prepared to produce reports in the language of target audiences. Although this may seem an obvious point, it has yet to be implemented in common practice.
- Discussion with school faculty and the results of the survey described in this study reveal that the reporting approach adopted by the Urban District Assessment Consortium has met with a great deal of success. We believe the key to this success was to consider (1) Who is/are the target audience(s)? (2) What results are to be communicated? And (3) what strategy is best to communicate these results?

A recent report by the National Commission on Testing and Public Policy estimated students in elementary and secondary schools take 127 million separate standardized tests annually at a cost of about 1 billion dollars (National Commission on Testing and Public Policy, 1990). Concerns have been raised as to the effectiveness of reporting techniques used to report the results of these testing programs. The depth and richness of information tapped by alternative assessment procedures presents an even greater challenge to assessment programs as they attempt to report this information effectively and accurately. Adherence to the recommendations reported in this study will facilitate the development of effective and accurate methods of reporting assessment results as assessment programs move forward into the rich realm of alternative assessments. Research performed by UDAC, with regard to meaningful reporting strategies, can be a useful model for school

districts who want testing "experts" within testing organizations to better serve the needs of schools.

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Figure 1

A Portion of a Typical Appendix from a UDAC Report.

Appendix I

Mathematics Grade 8 (calculators were allowed.)

This appendix reports student achievement on UDAC open-ended and performance items that were sorted into four levels of difficulty: routine applications; using data to solve simple problems; application of algebraic, geometric and statistical rules and procedures; and, using data to solve complex algebraic, geometric and statistical problems. As you look at this data, think about what it tells you about how well your school is performing.

Routine applications: Students perform addition and subtraction with whole numbers; do simple multiplication and division problems; demonstrate familiarity with measurement and simple pattern recognition. These are four items at this level. In the eighth grade at the Hypothetical Middle School:

95% of students were rated as excellent; 3% as satisfactory; and 2% as incorrect.

The mean result of all BPS school eighth grade students:

80% were rated as excellent; 17% as satisfactory; and 3% as incorrect.

An example of **routine application** problems is:

Compute the answer to these problems.

435	626	705
- 224	- 238	- 319

Figure 2

A Typical Final Page from a UDAC Report. This is a Section Requiring Two-Way Interaction Between the Report Authors and the School Population.

In the spaces provided below, answer the questions explaining your reasoning.

In general, we feel this report matches (or does not match) our perception of how well our children are performing in:

MATH _____

SCIENCE _____

READING _____

WRITING _____

Whether or not the report is consistent with your perceptions, what next steps do you need to take? What resources do you need? How can you get these resources? What strategies should you adopt? _____

Table 1

Reported Understanding of Statistics Found in Reports Prepared by Testing Organizations (Percent).
(n=16)

Statistic	Not Understood	Understood
Mean	-	100
5 th & 95 th Percentiles	-	100
10 th & 90 th Percentiles	-	100
25 th & 75 th Percentiles	-	100
Median	13	87
Range	13	87
Standard Deviation	13	87
Percent Correct	13	87
Validity	38	62
Reliability	38	62
Mode	50	50
Variance	50	50
Item Discrimination	63	37
Standard Error	75	25
Standard Error of Estimation	88	12
Standard Error of Measurement	88	12

Table 2

Reported Usefulness of Statistics Found in Reports Prepared by Testing Organizations (Percent).
(n=16)

Statistic	Very Useful	Useful	Somewhat Useful	Not Useful
Percent Correct	63	25	-	12
Validity	42	29	-	29
Reliability	42	29	-	29
Item Discrimination	38	-	12	50
25 th & 75 th Percentiles	38	25	25	12
Mean	25	38	12	25
Median	25	50	12	12
Range	25	38	-	38
Mode	12	12	12	62
5 th & 95 th Percentiles	12	25	25	38
10 th & 90 th Percentiles	-	38	25	38
Standard Deviation	-	38	-	62
Variance	-	12	12	75
Standard Error	-	-	12	88
Standard Error of Estimation	-	-	12	88
Standard Error of Measurement	-	-	12	88

Table 3

Audiences With Whom Report Results Were Shared.
(n=8)

Audience	UDAC Report (Percent) Yes	No	MET Report (Percent) Yes	No
Teachers	100	-	100	-
Parents	100	-	100	-
Students	50	50	63	37
Other Administrators at the School	100	-	100	-
Other Principals	25	75	25	75
District Administrators	25	75	37	63
School Board	25	75	25	75
School Site Council	100	-	100	-
Other Audiences	-	-	-	-